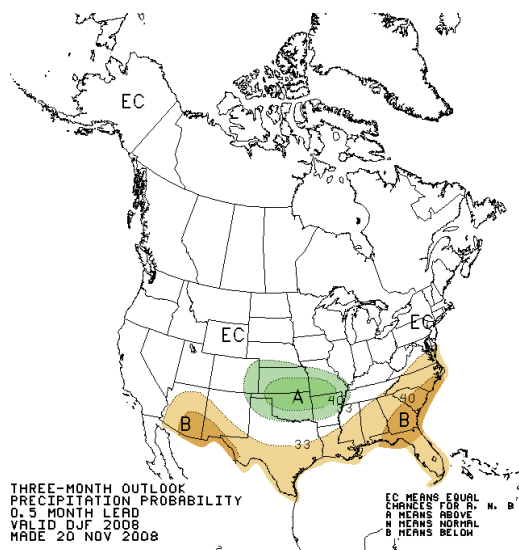
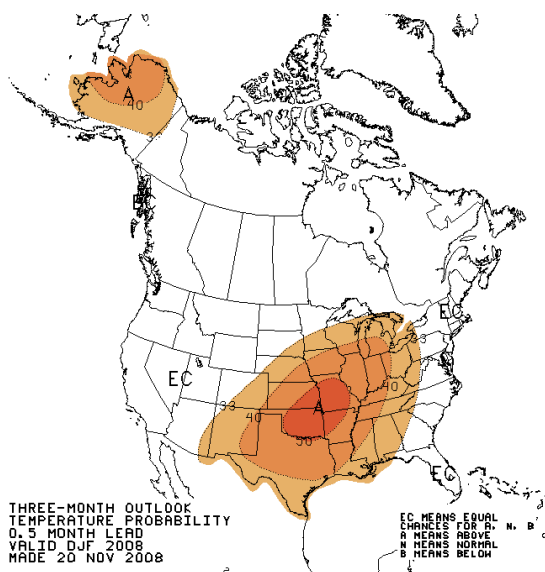
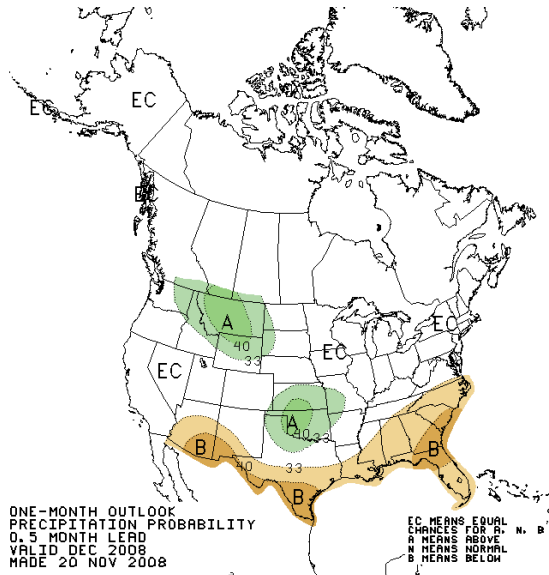
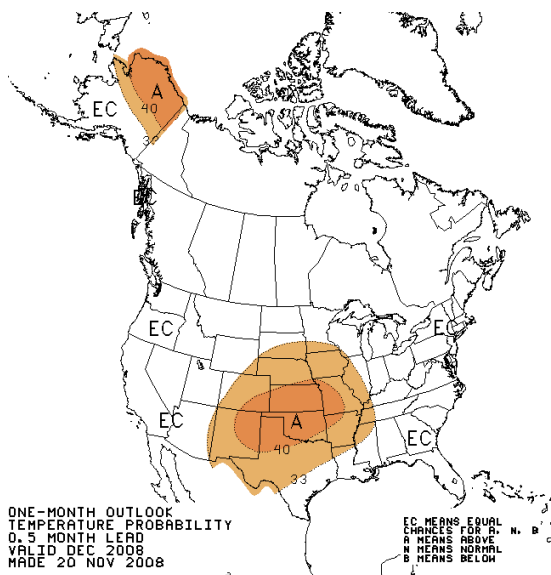


2008-2009 Winter Outlook

CLIMATE PREDICTION CENTER (CPC) Outlooks – The latest outlooks from CPC show a slight increased probability of above normal temperatures in December from southern South Dakota through southern Minnesota and all of Iowa, with a slight increased probability of above normal precipitation in far western South Dakota. The remaining areas have equal chances of above normal, normal, and below normal temperatures and precipitation.

For the entire winter season, CPC shows a slight increase in probabilities of above normal temperatures in the southeastern areas, with equal chances elsewhere. Precipitation shows equal chances for the entire area.

On the graphics below, where it shows equal chances (EC), that means that there is a 33.3% chance of above, normal, or below values. Where the above normal areas are drawn (A) in South Dakota, there is about a 37.0% chance of being above, a 33.3% chance of being normal, and a 29.7% chance of being below.



National Weather Service, Sioux Falls (WFO FSD) Experimental Outlook

WFO FSD has been doing experimental 1 to 3 month temperature and precipitation outlooks for the past two years. These outlooks are done to localize the national scale CPC outlooks down to South Dakota and the surrounding areas of Minnesota, Iowa, and Nebraska that are in the WFO FSD Forecast Area. These outlooks are created by looking back at historical values of several climate indices, and comparing those to historically observed temperature and precipitation anomalies. This is done subjectively by comparing the current indices to find “best-match” years (analogs) in the historical database, as well as statistically using a neural network computer model.

The official CPC forecasts give a percentage probability of being above normal, normal, and below normal for the entire United States. The local FSD outlooks use the information above to enhance the temperature and precipitation anomaly forecasts from CPC for the next 1 to 3 months. Early verification over the past 12 months of the WFO FSD outlooks has shown increased skill compared to climatology. However, these forecasts remain experimental and are provided for information purposes only. CPC forecasts are the official forecasts of the National Weather Service.

Climate Indices

Arctic Oscillation (AO) – the AO is moderately positive. It has been fairly steady since the middle of October. The November AO has a weak positive correlation with December temperatures, and a stronger negative correlation with January and February temperatures. This also has a weak to moderate negative correlation with December through February precipitation.

Pacific-North American Index (PNA) – the PNA is weakly positive. It has been fairly steady since early September. The November PNA generally has a weak positive correlation with December - February temperatures in South Dakota. It also has a generally weak positive correlation with winter precipitation.

North Atlantic Oscillation (NAO) – the NAO is near zero, as it has been since early September. Since the NAO is near zero, it is not expected to have an impact on the winter weather in our area.

Southern Oscillation Index (SOI) – the SOI is moderately positive, and has been fairly steady since early September. The November SOI shows a moderate to strong negative correlation with December – February temperatures. It also has a weak to moderate negative correlation (on average) with December and January precipitation, and a stronger negative correlation with February precipitation.

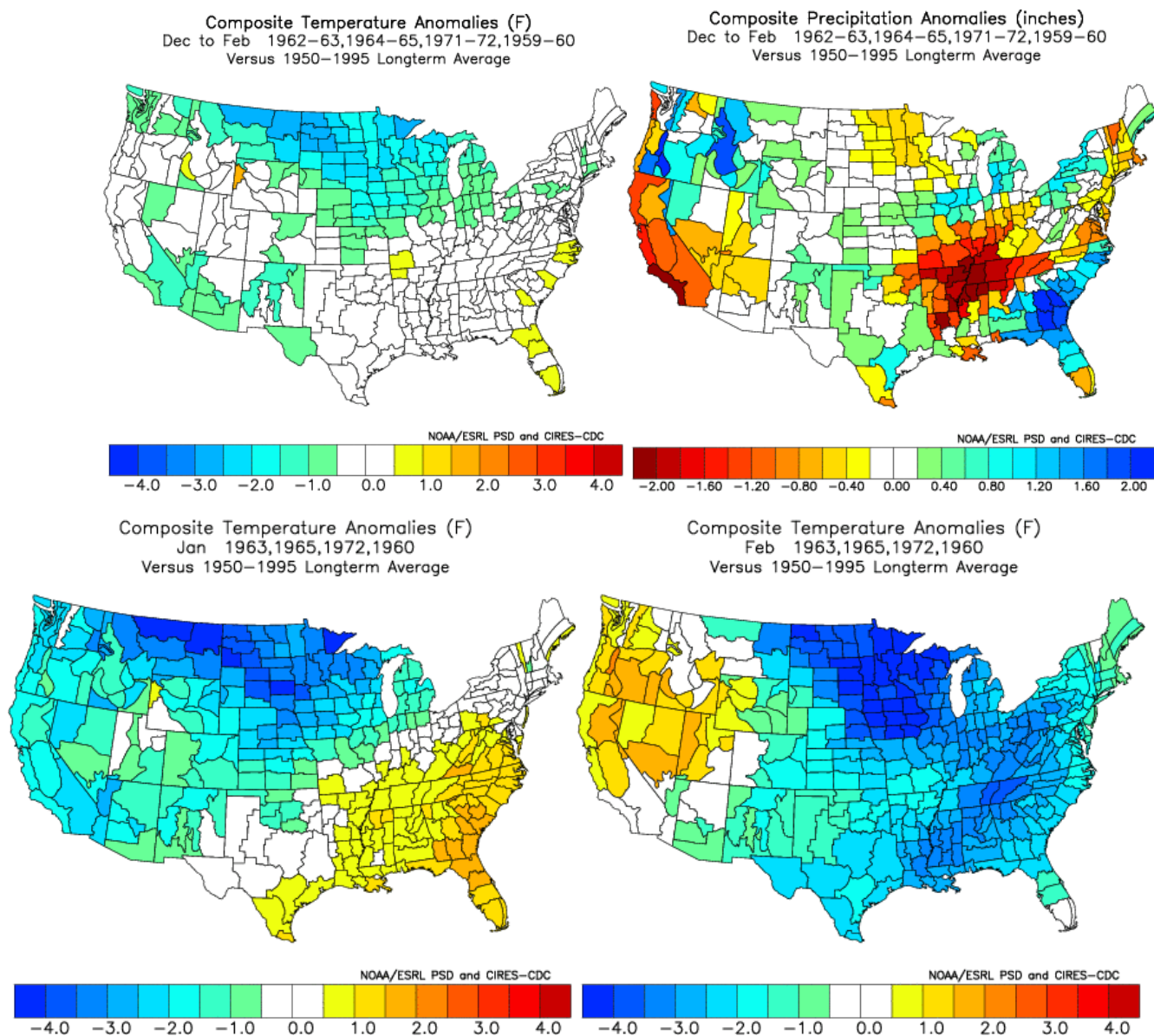
Sea Surface Temperature Anomalies (SSTA) (Nino regions 1.2, 3, 3.4, and 4) – SSTA's in all regions are running weakly negative (neutral to weak La Nina type conditions), and have been fairly consistent since early September. The November SSTA's show moderate to strong positive correlations with December - February temperatures and generally weak to moderate negative correlations with winter precipitation.

ANALOG YEARS – The following analog years were determined by looking at the past several months of the climate indices and comparing them to historical values to see which years are most similar.

1959, 1962, 1964, and 1971 had three indices that were a close match.

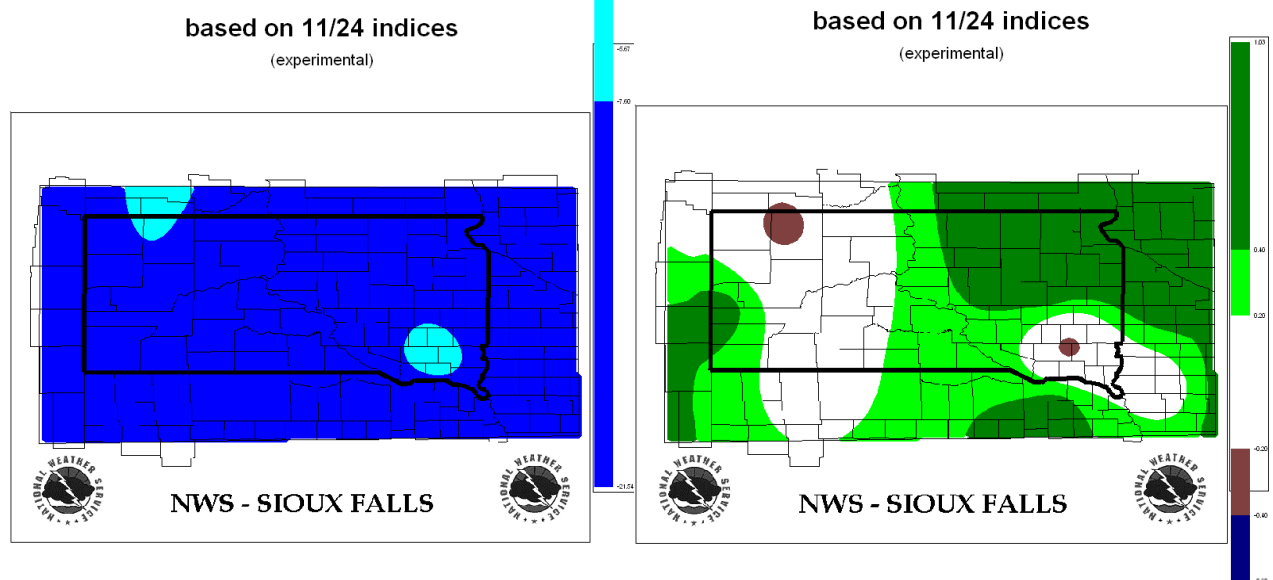
1952, 1978, 1984, 1998, 1999, 2000, and 2007 had 2 indices that were a close match.

Looking at the composite temperature and precipitation anomalies for these analog years indicates near normal temperatures in December, trending to below normal temperatures in January and February. Averaging the precipitation for these analog years shows near normal precipitation for December, January, and February.

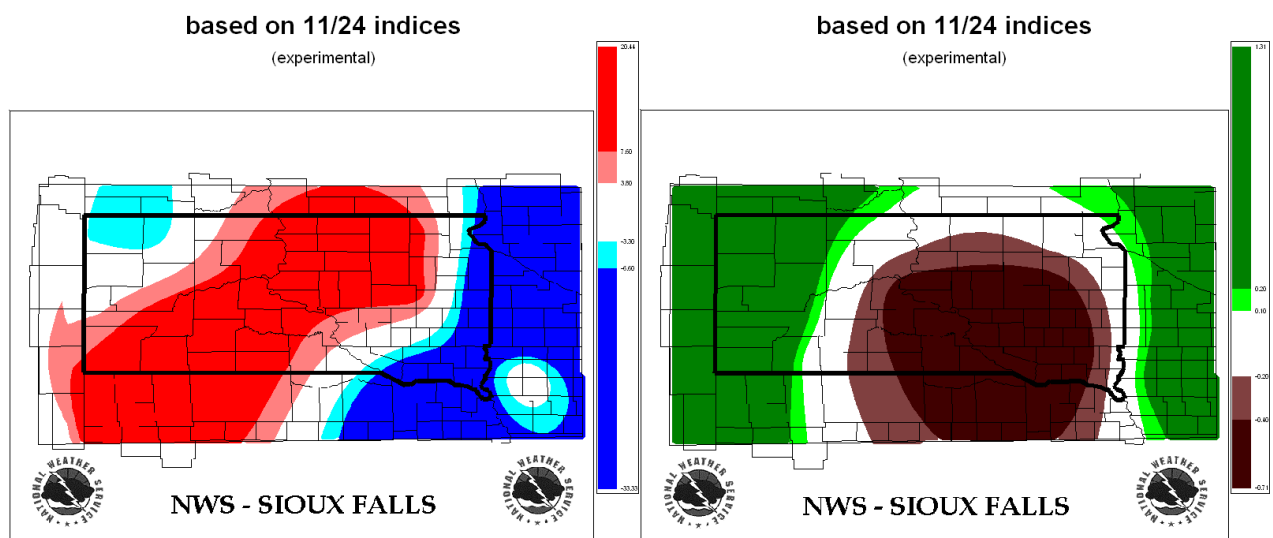


FSD Neural Networks – The following is the output from the experimental neural network program being developed at WFO FSD. December shows much below normal temperatures for all of South Dakota, and normal to above normal precipitation. For January, they show above normal temperatures west and below normal temperatures east, with above normal precipitation far west, and below normal precipitation in the central and east. For February, they show above normal temperatures in the southwest, and normal to below normal temperatures in the central and northeast. Precipitation for February is basically much above normal for all areas. Averaging out these outlooks for the entire winter season (Dec-Feb), the networks show normal temperatures west, and below normal temperatures central and east, and basically above normal precipitation for all areas.

December 2008 Temperature OutlookDecember 2008 Precipitation Outlook

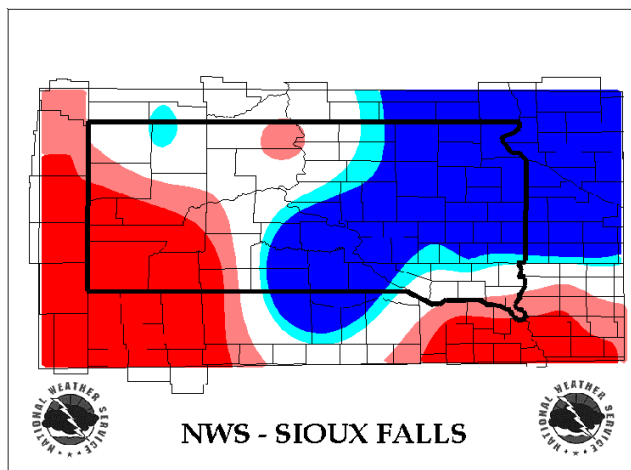


January 2009 Temperature OutlookJanuary 2009 Precipitation Outlook

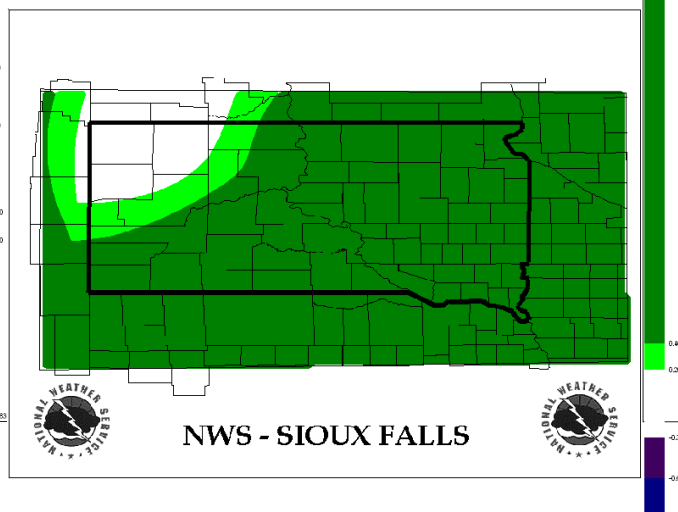


February 2009 Temperature OutlookFebruary 2009 Precipitation Outlook

based on 11/24 indices
(experimental)



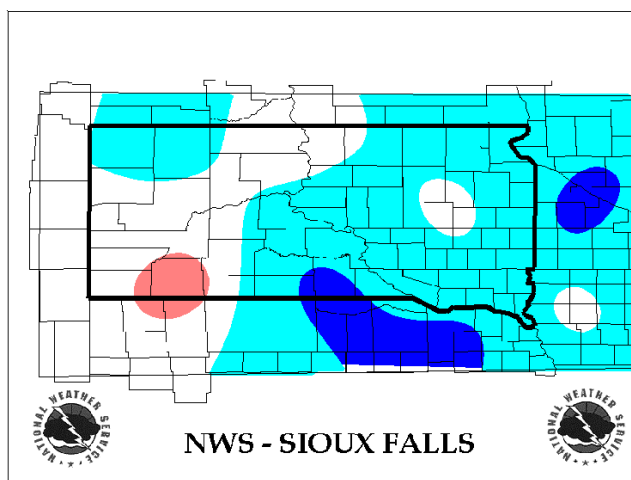
based on 11/24 indices
(experimental)



Based on the above information as of 11/24/2008, the NWS Sioux Falls experimental outlook for temperatures and precipitation for December 2008, January 2009, February 2009, and the average for the winter season of December through February indicate that South Dakota and the surrounding areas of northwest Iowa and southwest Minnesota will have an increased probability of **below normal temperatures** for the winter of 2008-2009, with **near normal to above normal precipitation**.

Winter 08/09 Temperature Outlook Winter 08/09 Precipitation Outlook

based on 11/24 indices
(experimental)



based on 11/24 indices
(experimental)

